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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/191,930	11/13/1998	CHIEN CHIANG	42390.P6459	9178

7590 08/13/2002

RAYMOND J WERNER
BLAKELY SOKOLOFF TAYLOR & ZAFMAN
12400 WILSHIRE BOULEVARD
7TH FLOOR
LOS ANGELES, CA 90025

EXAMINER
MALSAWMA, LALRINFAMKIM HMAR

ART UNIT	PAPER NUMBER
2825	

DATE MAILED: 08/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Advisory Action	Applicati n N .	Applicant(s)	
	09/191,930	CHIANG ET AL.	
	Examiner	Art Unit	
	Lex Malsawma	2825	

--The MAILING DATE of this communication appears on the cover sheet with the correspond nce address --

THE REPLY FILED on 30 July 2002 FAILS TO PLACE THIS APPLICATION IN CONDITION FOR ALLOWANCE. Therefore, further action by the applicant is required to avoid abandonment of this application. A proper reply to a final rejection under 37 CFR 1.113 may only be either: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114.

PERIOD FOR REPLY [check either a) or b)]

a) ☒ The period for reply expires 3 months from the mailing date of the final rejection.

b) ☐ The period for reply expires on: (1) the mailing date of this Advisory Action, or (2) the date set forth in the final rejection, whichever is later. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of the final rejection.
ONLY CHECK THIS BOX WHEN THE FIRST REPLY WAS FILED WITHIN TWO MONTHS OF THE FINAL REJECTION. See MPEP 706.07(f).

Extensions of time may be obtained under 37 CFR 1.136(a). The date on which the petition under 37 CFR 1.136(a) and the appropriate extension fee have been filed is the date for purposes of determining the period of extension and the corresponding amount of the fee. The appropriate extension fee under 37 CFR 1.17(a) is calculated from: (1) the expiration date of the shortened statutory period for reply originally set in the final Office action; or (2) as set forth in (b) above, if checked. Any reply received by the Office later than three months after the mailing date of the final rejection, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

1. ☐ A Notice of Appeal was filed on _____. Appellant's Brief must be filed within the period set forth in 37 CFR 1.192(a), or any extension thereof (37 CFR 1.191(d)), to avoid dismissal of the appeal.

2. ☐ The proposed amendment(s) will not be entered because:

   (a) ☐ they raise new issues that would require further consideration and/or search (see NOTE below);

   (b) ☐ they raise the issue of new matter (see Note below);

   (c) ☐ they are not deemed to place the application in better form for appeal by materially reducing or simplifying the issues for appeal; and/or

   (d) ☐ they present additional claims without canceling a corresponding number of finally rejected claims.

   NOTE: _____.

3. ☐ Applicant's reply has overcome the following rejection(s): _____.

4. ☐ Newly proposed or amended claim(s) _____ would be allowable if submitted in a separate, timely filed amendment canceling the non-allowable claim(s).

5. ☒ The a)☐ affidavit, b)☐ exhibit, or c)☒ request for reconsideration has been considered but does NOT place the application in condition for allowance because: *see attached remarks*.

6. ☐ The affidavit or exhibit will NOT be considered because it is not directed SOLELY to issues which were newly raised by the Examiner in the final rejection.

7. ☒ For purposes of Appeal, the proposed amendment(s) a)☐ will not be entered or b)☐ will be entered and an explanation of how the new or amended claims would be rejected is provided below or appended.

   The status of the claim(s) is (or will be) as follows:

   Claim(s) allowed: _____.

   Claim(s) objected to: _____.

   Claim(s) rejected: *17 and 20-44*.

   Claim(s) withdrawn from consideration: _____.

8. ☐ The proposed drawing correction filed on _____ is a)☐ approved or b)☐ disapproved by the Examiner.

9. ☐ Note the attached Information Disclosure Statement(s)(PTO-1449) Paper No(s). _____.

10. ☒ Other: attachment pages 2-4

Remarks

1. Applicant's remarks/arguments have been carefully reviewed and fully considered but they are not persuasive. Applicants assert that Usami and Havemann do not teach or suggest power lines in combination with signal lines wherein a smaller dielectric constant material is deposited between signal lines than between power lines. Applicants assert it would be unlikely that a person of ordinary skill in the art would find the discussion in Usami relevant to power lines because neither Usami nor Havemann mentions power lines; and Applicants submit that the modification of Usami is inappropriate because (a) it is based clearly on hindsight reasoning and (b) it is not appropriate to use interconnect line "3" for a combination of power lines and signal lines. On pages 9-10, Applicants provide a detailed reasoning for their position, wherein Applicants stated, "*In order for the modification proposed by the Examiner to be appropriate, there must be some teaching, suggestion, or motivation of the desirability of the modification of Usami found either in the cited references themselves or in the knowledge generally available to one of ordinary skill in the art. Such teaching, suggestion, or motivation does not exist*" (see last paragraph on page 9). It is noted that Doo was cited to show, at very least, the knowledge generally available to one of ordinary skill in the art. Applicants seem to be entirely ignoring Doo, especially since they have requested references in support of what is "allegedly well known" (note section at the center of page 13). In response to Applicants request, attention is directed to Doo (col. 3, line 20 to col. 4, line 16). Doo specifies three significant problems are well known (note col. 2, lines 21), the three problems are as follows:

(1) a first problem is signal propagation delay which is due to high-dielectric-constant insulating material, i.e., the higher the dielectric constant the lower the signal propagation (note

col. 3, lines 29-42), therefore, it is clearly desirable to utilize a low-dielectric-constant material between signal lines in order to decrease signal propagation delay;

(2) a second problem is cross talk between signal lines (note col. 3, lines 44-48), note that problems "(1)" and "(2)" are the same problems that are described and avoided by Usami (see Usami, col. 8, lines 14-20); and

(3) a third problem of driver noise caused by inductance in power supply metallurgy and wiring (i.e., in power lines, note col. 3, lines 51-55). Doo discloses that reducing the inductance will reduce the driver noise, and said reducing can be achieved by increasing the capacitance of the power line (note col. 4, lines 4-6 and 12-16). Anyone in the semiconductor art would realize that, for a given separation between a pair of interconnect lines, the capacitance between the pair can be readily increased by utilizing a high-dielectric-constant material between the pair of lines, i.e., can be readily increased in comparison to utilizing a low-dielectric-constant material between the pair of lines. In other words, given (i) a plurality of interconnect lines formed on the same level of metallization and (ii) two different dielectric-constant materials that are to be incorporated between the plurality of lines, the knowledge generally available to one of ordinary skill in the art clearly shows it is desirable to utilize the lower-dielectric-constant material between the interconnect lines which will be used for signal lines and to utilized the higher-dielectric-constant material between interconnect lines which will be used for power lines.

In summary, Applicants remarks/arguments are not persuasive primarily because Usami and/or Havemann disclose the general conditions of the current invention, wherein the significant difference between the current invention and Usami/Havemann appears to be (by Applicants' remarks) that the current invention specifically discloses forming a combination of

power lines and signal lines on the same level of metallization, and Usami/Havemann lacks specifying whether some interconnect lines may or may not be utilized for power lines. However, with the knowledge generally available to one of ordinary skill in the art, it would have been obvious to modify Usami and/or Havemann by specifying power lines and signal lines.

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lex Malsawma whose telephone number is 703-306-5986.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on 703-308-1323. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Lex Malsawma

August 8, 2002

S. Luerhast
SUPERVISORY
PRIMARY EXAMINER